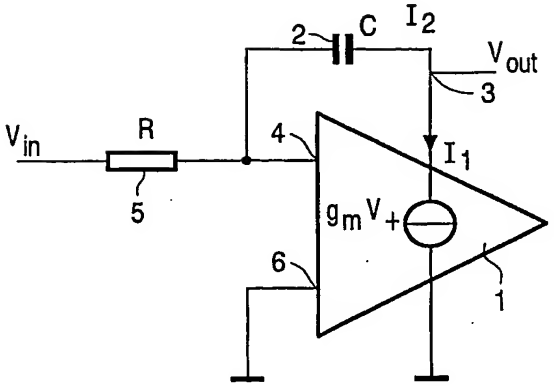

FIG. 1 PRIOR ART

$$I_2 = \frac{V_{out} - V_{in}}{1/sC + R} \qquad \text{Equation 1}$$

$$I_1 = g_m V_+ = \frac{g_m V_{in}/sC + g_m V_{out} R}{1/sC + R} \qquad \text{Equation 2}$$

$$V_+ = \frac{V_{in}/sC + V_{out} R}{1/sC + R} \qquad \text{Equation 3}$$

$$I_1 + I_2 = 0 \qquad \text{Equation 4}$$

$$\Rightarrow V_{out} - V_{in} + g_m V_{in}/sC + g_m V_{out} R = 0 \qquad \text{Equation 5}$$

$$\Rightarrow \frac{V_{out}}{V_{in}} = -\frac{1 - sC/g_m}{s(1/g_m + R)C} \qquad \text{Equation 6}$$

FIG. 5

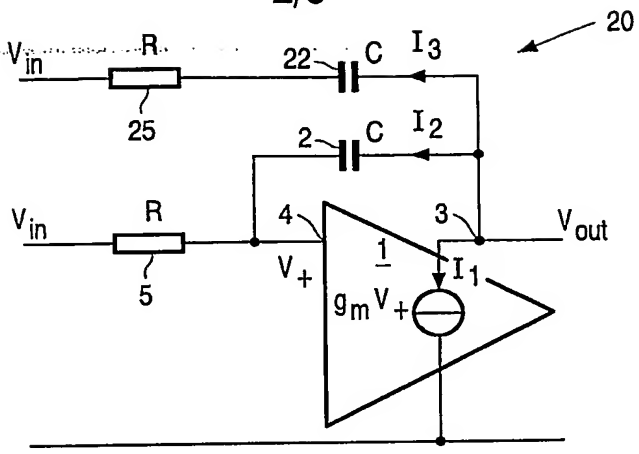

FIG. 2

$$I_2 = \frac{V_{out} - V_{in}}{1/sC + R} \qquad \text{Equation 7}$$

$$I_3 = \frac{V_{out} + V_{in}}{1/sC + R} \qquad \text{Equation 8}$$

$$I_2 + I_3 = \frac{2V_{out}}{1/sC + R} \qquad \text{Equation 9}$$

$$V_+ = \frac{V_{in}/sC + V_{out}\,R}{1/sC + R} \qquad \text{Equation 10}$$

$$\Rightarrow I_1 = \frac{g_m V_{in}/sC + g_m V_{out}\,R}{1/sC + R} \qquad \text{Equation 11}$$

$$I_1 + I_2 + I_3 = 0 \qquad \text{Equation 12}$$

$$g_m V_{in}/sC + g_m V_{out}\,R + 2V_{out} = 0 \qquad \text{Equation 13}$$

$$\frac{V_{out}}{V_{in}} = -\frac{1}{s(2/g_m + R)C} \qquad \text{Equation 14}$$

FIG. 6

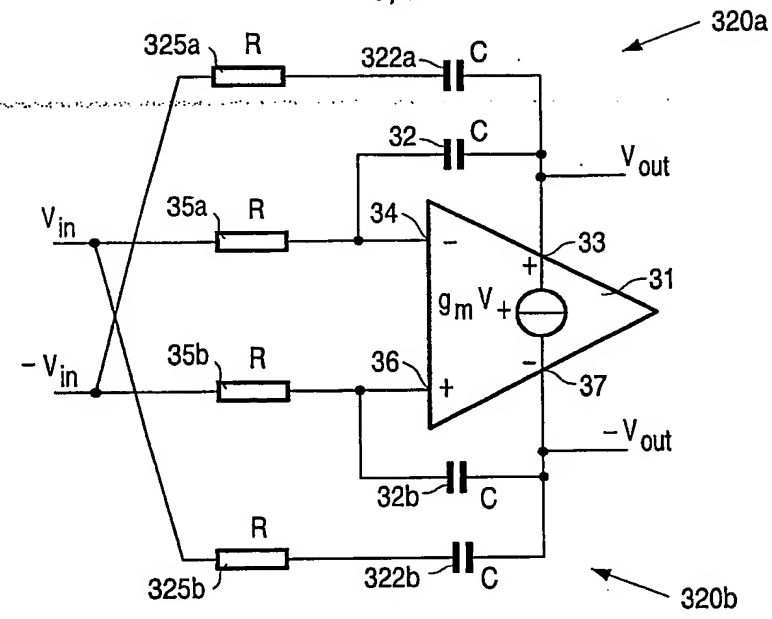
320a
325a
R
322a
C
32
C
V_{out}
V_{in}
35a
R
34
33
31
$g_m V_+$
$-V_{in}$
35b
R
36
37
$-V_{out}$
32b
C
R
325b
322b
C
320b

FIG. 3

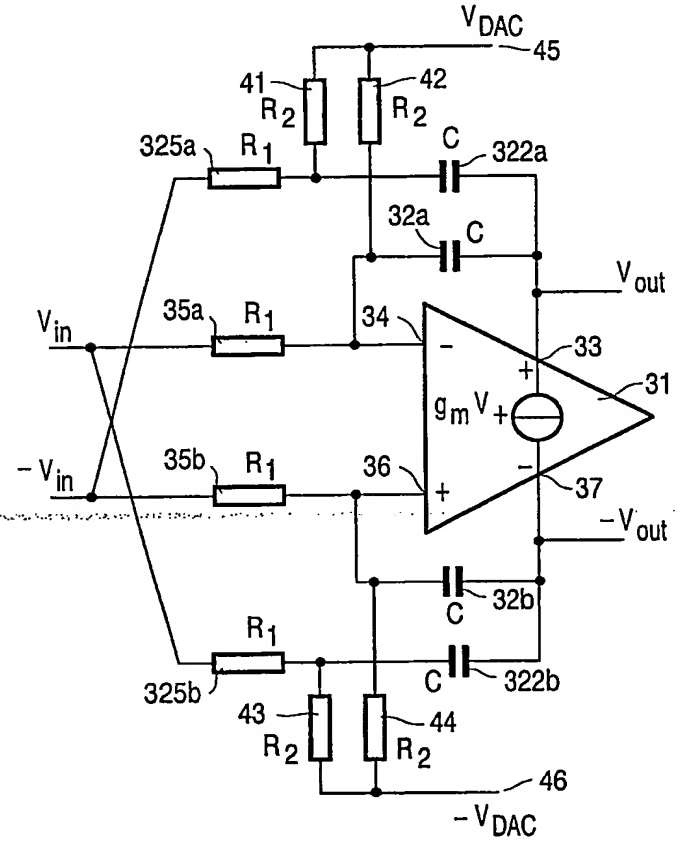
V_{DAC}
45
41
R_2
42
R_2
325a
R_1
C
322a
32a
C
V_{out}
V_{in}
35a
R_1
34
33
31
$g_m V_+$
$-V_{in}$
35b
R_1
36
37
$-V_{out}$
C
32b
R_1
325b
C
322b
43
R_2
44
R_2
46
$-V_{DAC}$

FIG. 4